Application Method 8

Metam Sodium and Metam Potassium Field Soil Fumigation Recommended Permit Conditions for Spray Blade with Soil Cap Applications

Introduction

These permit conditions were developed to mitigate hazards of offsite movement of methyl isothiocyanate following applications of metam sodium, metam potassium and dazomet. Risk assessment and illnesses identified excess risk of field workers and bystanders near applications of these fumigants.

These permit condition requirements are coordinated with, but are not part of, the volatile organic compound regulations in Title 3, California Code of Regulations (3 CCR) sections 6450 through 6450.2.

CAC discretion

1. The CAC have the discretion to use mitigating conditions based on the local use conditions that have worked for them in the past.
2. The permit conditions are based on the fairly limited data that DPR has available. It does not cover all environmental conditions, climates, soil types, etc.

Prohibited fumigations near schools, day care centers, and preschools

1. When made to more than 5 acres, applications are prohibited within ½ mile of a school property when school is in session or is scheduled to be in session while the buffer zone is in effect.
2. When made to **5 acres or less**, applications are prohibited within ¼ mile of a school property when school is in session, or is scheduled to be in session while the buffer zone is in effect.

Accident response

1. All employees involved in an application or post-application procedures must receive annual training in accident response procedures.
2. Employers must keep a record of employee training for a period of 2 years.

Permit application

Permit applications must include a map or description of all occupied structures and bystander areas within ½ mile of the fumigation site and all schools within 1 mile of the fumigation site.

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Recommended Permit Conditions for Spray Blade with Soil Cap Applications, Continued

Fumigation management plan

For all applications the operator of the property must:

- Provide a copy of the California Fumigation Management Plan (CA FMP) to the pest control business applying metam sodium and metam potassium.
- Have the CA FMP available, at the work site, while the application and post-application work activities are performed.

Notice of Intent

1. The Notice of Intent (NOI) is required to be submitted at least 48 hours prior to a fumigation.
2. In addition to information required in 3 CCR section 6434(b), the following information must be submitted with the NOI:
   - The number of application blocks to be treated and acreage of each application block.
   - The time (within a 4-hour window) that each application is scheduled to commence. Once the 4-hour window closes a new NOI is required, but another 48-hour waiting period would not be needed unless required by the CAC.
   - The buffer zone size and buffer zone duration.
   - The certified applicator's 24-hour contact telephone number.
   - Documentation of agreement allowing the buffer zone to extend onto the adjoining agricultural property, if applicable.
   - Documentation of agreement to allow a buffer to extend into the property of an occupied structure property, if applicable.

Application timing

Applications must start no earlier than 1 hour after sunrise and must be completed in no later than 1 hour before sunset.

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Recommended Permit Conditions for Spray Blade with Soil Cap Applications, Continued

Buffer zones

1. **Distance**
   - All metam *sodium* spray blade with soil cap applications require a 100-foot buffer zone.
   - All metam *potassium* spray blade with soil cap applications require a 90-foot buffer zone.
   - If the buffer zone required by the permit conditions and the label conflict, use the longest of the two buffer zones.
2. **Onsite measurement**
   - The buffer zone is measured from the perimeter of the application block to the perimeter of an occupied structure or bystander area property line.
3. **Restrictions**
   - The following restrictions apply from the start of the application until the expiration of the buffer zone:
     i) Buffer zones are in effect at the start of the application.
     ii) Buffer zones shall not contain occupied structures.
     iii) The operator of the property shall assure that no persons are allowed in a buffer zone except to transit, perform fumigation handling activities and commissioner-approved activities.
     iv) Buffer zones shall not extend into properties of occupied structures or bystander areas.
     v) Buffer zones shall not extend into adjoining agricultural properties.
     vi) The CAC may approve buffer zones that extend across transit sites (streets, highways, etc.).
4. **Exemptions**
   - If advanced permission is obtained from the property owner, operator or legal resident, the buffer may encroach onto the property of an occupied structure up to a clearly specified boundary. Documentation of this agreement must be submitted with the NOI.
   - When an application requires the buffer zone to extend into an adjoining agricultural property, an agreement must be obtained. The operator of the property to be treated must document how the operator of the adjoining property will ensure workers will not enter the buffer zone. Documentation of this agreement must be submitted with the NOI.

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Recommended Permit Conditions for Spray Blade with Soil Cap Applications, Continued

Buffer zones (continued)

5. **Duration**
   - Buffer zones remain in effect for 24 hours after the completion of metam sodium or metam potassium applications when spray blade with soil cap application methods are used.

Monitoring requirements

1. General Information
   - Monitoring information must be recorded on the Application Summary and Monitoring form (Appendix II) or equivalent form. The operator of the property may substitute the CA FMP required by new federal labels for the Application Information and Monitoring Plan.
   - If monitoring indicates a change that could result in offsite movement (e.g., increased or greatly decreased wind speed, change in wind direction toward occupied structures) the grower or applicator should be ready to take whatever action is necessary to prevent or reduce offsite movement. This would include postponing or stopping an application and immediately applying water or a soil cap.
   - Monitoring records must be maintained for 2 years.
2. **Pre-Application**
   - The following conditions must be met and recorded immediately prior to the application:
     i) Monitor and document wind speed and direction, soil temperature, moisture content, and air temperature at the application site.
   - Applications may not begin if:
     i) Soil temperature at 3 inch depth is greater than 90 degrees F.
     ii) Soil moisture above the depth of application is insufficient to meet the following test appropriate to the soil texture:
       (1) coarse soils (sand and loamy sand), at least enough moisture to form a ball when compressed by hand that may break when tapped;
       (2) loamy, moderately coarse or medium textured (coarse sandy loam, sandy loam, fine sandy loam) at least enough moisture to form a ball that holds together when tapped;
       (3) fine texture soils (clay loam, silty clay loam, sandy clay, silty clay, sandy clay loam and clay), at least enough moisture that soil is pliable, not crumbly.

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Recommended Permit Conditions for Spray Blade with Soil Cap Applications, Continued

3. **Application**
   - The operator of the property or a trained employee must be present during the application.
   - The following application conditions must be monitored and recorded during the application:
     i) Wind speed and wind direction must be monitored **every hour** until the application is completed.
     ii) Any unusual conditions (e.g., odor, reported illness, equipment failure or spill) observed at the work site.
4. **Post-application**
   - On the day of application, the operator of the property or a trained employee must be at the site continually from 1 hour before sunset through 1 hour after sunset, in addition to the periods required to conduct post-application monitoring. If an employee is present at the site, the employee must be able to immediately contact the operator of the property or have authority to respond in case any unusual conditions occur.
   - Post-application field monitoring shall be conducted for 12 hours following application:
     i) For applications made in *sensitive areas*, (this includes applications made within ½ mile of a school when in session during application or the duration of the buffer zone) monitoring must occur **every hour**.
     ii) For applications made in a *standard area monitoring must occur* **every two hours**.
   - The following post-application conditions must be monitored and recorded at the appropriate intervals:
     i) Wind speed and direction at the application site.
     ii) Air temperature at the application site.
     iii) Any unusual conditions observed at the worksite (e.g., dry soil conditions, odor or irrigation equipment failure).

Specific application requirements

1. Each application block shall not exceed 80 acres.
2. All equipment must be inspected and tested prior to use to assure it is in good working condition.
3. The fumigant must be under at least 6 inches of untreated soil, either as a result of incorporating the material to this depth, or by applying a cap of untreated soil.

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Recommended Permit Conditions for Spray Blade with Soil Cap Applications, Continued

Post-application requirements	1. Post-application water is not required for spray blade applications with a 6-inch soil cap. 2. However, the operator of the property should have water or untreated soil available to apply at any time in response to odor or illness.

APPENDIX I

Definitions

Application: Activities required to incorporate metam sodium, metam potassium or dazomet into the prepared soil. Applying additional water to the treated soil in order to suppress off-site movement of MITC is not part of the application process.

Bystander Area: An area used or visited by people on a daily basis, including parks, playgrounds, lakes, reservoirs, bus stops, and other similar areas where groups of people visit, or other areas identified by the CAC.

Drench Application: Application is made to pre-formed beds or to rows, using low-pressure (30 – 35 pounds per square inch) booms with nozzles <12 inches above the top of the beds.

MITC: Methyl isothiocyanate. Metam sodium, metam potassium, and dazomet break down into a number of compounds. MITC is one of the breakdown compounds.

Multiple Blocks: Application blocks of an individual operator of the property that are less than ¼ mile apart and are treated consecutively over a 2-day period. In order for two applications to be considered independent, the buffer zone for one application must still be adequate if the second application is upwind of the first application.

Occupied Structure: A home or other building that may be occupied at any time during a 24-hour period. This includes living and working areas that are associated with the occupied structure (e.g., yard, garden). Homes occupied by the property owner or permittee are excluded from this definition.

Ozone Nonattainment Area: An area designated in Title 40, Code of Federal Regulations section 81.305 for the purpose of air quality planning within the chart titled "California – Ozone (1-Hour Standard)".

Power Mulcher Application: Metam is sprayed on or injected under the soil surface immediately in front of a power driven mulcher. The treated soil is mulched with untreated soil at a depth set to where control is desired and immediately compressed by a soil-compacting device.

Rod Bar Application: Backward-facing hollow tube (rod) attached to a metal blade-like horizontal bar. The rod bar is designed to operate under the surface of pre-formed beds, dispersing metam through holes spaced ½ - 1 inch linearly along the entire length of the bar. The application is immediately followed by a bed shaper or solid press rollers that compact the soil over the treated area.

Rotary Tiller Application: Metam is sprayed on or injected under the soil surface immediately in front of a power driven tiller. The treated soil is tilled with untreated soil at a depth set to where control is desired and immediately compressed by a soil-compaction device.

APPENDIX I

School: An institution for the instruction of children from kindergarten through high school. Also included are day care centers and preschools, as defined in the Health and Safety Code section 1596.76. *"Day care center" means any child day care facility other than a family day care home, and includes infant centers, preschools, extended day care facilities, and schoolage child care centers.* This excludes family home day care. (Users can find day care centers in their area by going to the following website: https://secure.dss.cahwnet.gov/ccld/securenet/ccld_search/ccld_search.aspx. Search on "child care center" as the facility type and then search on ZIP code, city, county or area code to find the names and addresses of the child care centers in a specific area.)

Sensitive Area: An area where the application block is ¼ mile or less from occupied structures (e.g., residences, employee housing, businesses, schools, convalescent homes, hospitals), bystander areas, and other similar sites determined by the CAC.

Soil Capping Application: Following a metam sodium or metam potassium band treatment, a minimum of 6 inches of untreated soil is placed over the band.

Spray Blade Application: An 8 - 14 inch horizontal "V"-shaped blade designed to operate under the soil surface with one or two backward-facing spray nozzles placed under the leading edge. The blade is placed 1 - 4 inches below the soil surface and the resulting subsurface band is further covered with disk-hillers immediately following to form a minimum 6-inch protective cap over the treated band.

Standard Area: An area where the application block is greater than ¼ mile away from occupied structures (e.g., residences, employee housing, businesses, schools, convalescent homes, hospitals), bystander areas, and other similar sites determined by the CAC.

APPENDIX II

Metam Sodium/Potassium and Dazomet

Application Summary and Monitoring Form

APPLICATION INFORMATION

Grower Name: _____

Permit Number: _____

Field Location and Site ID #: _____

Metam Sodium/Metam Potassium,
Dazomet Certified Person: _____

Applicator/P.C.O.: _____

Pesticide Applied: _____

Pounds active ingredient/Acre: _____

Application Rate: _____

Number Acres Treated: _____

PRE-APPLICATION REQUIREMENTS:

Wind Speed and Direction
(at 4-6 feet above ground): _____

Soil Temperature (3" depth): _____

Soil Moisture: _____

Air Temperature: _____

Buffer Zone Table Number: _____

Buffer Zone Distance (Feet): _____

APPENDIX II

Metam Sodium/Potassium and Dazomet
Application Summary and Monitoring Form

APPLICATION REQUIREMENTS

1. Sprinkler Applications

Water Pressure (pounds/square inch): _____

Nozzle Size: _____

Length/Line: _____

Irrigation Rate (inches/hour): _____

Irrigation Set Number: _____

Lines/Set: _____

Acres Treated/Set: _____

Application Start Time: _____

Application Completion Time: _____

2. Soil Injection Applications

Equipment Used: _____

Depth of Injection: _____

Compaction Equipment Used: _____

Application Start Time: _____

Application Completion Time: _____

3. Dazomet Applications

Equipment Used: _____

Application Start Time: _____

Application Completion Time: _____

APPENDIX II

Metam Sodium/Potassium and Dazomet
Application Summary and Monitoring Form

Table 1. Hourly Environmental Conditions During Application

Date: _____	**Time**	**Wind Speed (MPH)**	**Wind Direction (from)**	**Unusual Conditions**
Hour 1				
Hour 2				
Hour 3				
Hour 4				
Hour 5				
Hour 6				
Hour 7				
Hour 8				
Hour 9				
Hour 10				
End				

Table 2. Post-Application Water Treatments Sprinkler, Shank, and Dazomet

Water Treatment 1st, 2nd, 3rd	**Date/Time Started**	**Date/Time Completed**	**Inches**	**Comments**

APPENDIX II

Metam Sodium/Potassium and Dazomet
Application Summary and Monitoring Form

Table 3. Post-Application Field Monitoring

Date: _____	Time	Air Temp	Wind Speed (MPH)	Wind Direction (from)	Unusual Conditions
1 hour before sunset					
At sunset					
1 hours post application					
2 hours post application					
3 hours post application					
4 hours post application					
5 hours post application					
6 hours post application					
7 hours post application					
8 hours post application					
9 hours post application					
10 hours post application					
11 hours post application					
12 hours post application					

Note: Monitoring is required for a 12-hour period after application. Monitoring is required **every hour** for sensitive areas or areas between ½ - 1 mile of a school property when school is in session (or scheduled to be in session while the buffer zone is in effect). Monitoring is required **every two hours** if the application is between ¼ - ½ mile from an occupied structure or bystander area.